

## CLAIMS:

1. A low-pressure gas discharge lamp which includes a discharge vessel (1) and at least two spatially separated capacitive coupling-in structures (2) and operates at an operating frequency  $f$ , characterized in that

5 each capacitive coupling-in structure (2) is formed by at least one dielectric having a thickness  $d$  and a dielectric constant  $\epsilon$ , each dielectric being subject to the condition  $d/(f \cdot \epsilon) < 10^{-8}$  cm.s.

10 2. A low-pressure gas discharge lamp as claimed in claim 1, characterized in that at least one dielectric is subject to the condition  $d/(f \cdot \epsilon) > 10^{-9}$  cm.s.

15 3. A low-pressure gas discharge lamp as claimed in claim 1, characterized in that the operating frequency  $f$  is in the range of from 150 Hz to 1 MHz.

20 4. A low-pressure gas discharge lamp as claimed in claim 1, characterized in that the dielectric constant of the dielectric has an essentially negative temperature dependency.

25 5. A low-pressure gas discharge lamp as claimed in claim 1, characterized in that the discharge vessel (1) is shaped essentially as a hollow cylinder having an inside diameter  $d_i$  which is smaller than 10 mm.

6. A low-pressure gas discharge lamp as claimed in claim 5, characterized in that

the capacitive coupling-in structure (2) is shaped essentially as a hollow cylinder, has an inside diameter  $d_i$  and is connected to the discharge vessel (1) in a compression proof manner.

5 7. A low-pressure gas discharge lamp as claimed in claim 1, characterized in that the discharge vessel (1) is filled with a filling gas containing at least one inert gas.

8. A low-pressure gas discharge lamp as claimed in claim 7,  
10 characterized in that the filling gas contains mercury.

9. A low-pressure gas discharge lamp as claimed in claim 1, characterized in that  
15 the operating frequency  $f$  is less than 150 kHz.

10. A low-pressure gas discharge lamp as claimed in claim 1, characterized in that  
the discharge current of the gas discharge is more than 10 mA.

11. A low-pressure gas discharge lamp as claimed in claim 1, characterized in that  
the dielectric consists of a paraelectric, ferroelectric or anti-ferroelectric solid material.

25 12. A low-pressure gas discharge lamp as claimed in claim 1, characterized in that the discharge vessel (1) consists of an UV transparent material and is filled with a filling gas emitting UV.

30 13. A device for the backlighting of a liquid crystal display, including at least one low-pressure gas discharge lamp with a discharge vessel (1), at least two capacitive coupling-in structures (2), operating at an operating frequency  $f$ , as the light source (10), and an optical system (13, 14, 15) for producing backlighting, characterized in that

each capacitive coupling-in structure (2) consists of at least one dielectric having a thickness  $d$  and a dielectric constant  $\epsilon$ , each dielectric being subject to the condition  $d/(f \cdot \epsilon) < 10^{-8}$  cm.s.

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